and projected vials. Upper boundary was influenced more by total target patients, response rate, and expected price with no risk sharing. **CONCLUSIONS:** The concept of performance-based payment is a risk sharing between the payer and manufacturer for high-quality of new agent, and improves to patient's quality of life within the available national health-care budget. We show that the range of affordable price is calculated by a manufacturer's profit and neutral point of health-care budget in the performance-based risk sharing and discuss potential challenges.

HE4

THE EFFECT OF PRICE CONTAINMENT ON THE TREND OF PHARMACEUTICAL EXPENDITURE FROM 1999 TO 2007 IN TAIWAN

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OBJECTIVES: To control the high pharmaceutical expenditure, the Bureau of National Health Insurance introduced the generic grouping method to reduce price variation among off-patent drugs since 2000. The purpose of this study was to examine the effect of the price adjustments on the trend of pharmaceutical expenditure. **METHODS:** We used BNHI monthly claim data from 1999 to 2007 and incorporated drug registry file, drug price file and 2009 WHO ATC/DDD file. To further analyze the effect of generic grouping, we classified the branded drug into three categories patented branded drug, off-patent branded drug with no competitive generic drug and off-patent branded drug with competitive drug. **RESULTS:** We found that from 1999 to 2007, the annual growth rate of pharmaceutical expenditure was 6.0%; outpatient 6.3% and inpatient 5.5%. During the study period, the sales of the patented branded drugs rose from 20.5% to 30.9% with the highest increasing rate. The sales of the off-patent branded with competitive generic drugs and generic without the BA/BE testing drugs fell from 21.1% to 18.6% and from 39.3% to 28.4%, respectively. The sales volume in terms of DDD also has the same pattern as the drugs sales. Regarding the impact of drug price adjustment on Hospital, we found the share of drug claim by medical centers rose from 35.5% to 41.3%; regional hospitals from 25.3% to 30.2%, however local hospitals and primary health care decreased their share. In terms of firms, the IRPMA group held the highest increasing rate on share and importers held the lowest. **CONCLUSIONS:** The generic grouping price adjustment policy has effectively reduced the off-patent branded drug expenditure. However, total drug expenditure didn't decrease due to the increased expenditure of the new drugs with high prices.

POSTER SESSION

CANCER – Clinical Outcomes Studies

PCN1

THE EVALUATION OF ADR ONLINE REPORTING OF RADIOPAQUE AGENTS IN A UNIVERSITY HOSPITAL IN TAIWAN

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OBJECTIVES: Radiopaque agents induce ADR frequently. But the numbers of ADR reporting are less than actual happening because of heavy workload on medical staffs. We created a simple and convenient online reporting system to replace paper report in our hospital. The aim of this study was to assess the variation of reporting rate. **METHODS:** In the system, the cases reported by physician including medication used, time of ADR come up and description of ADR event. We downloaded the data of patients who administrated radiopaque agents retrospectively as the base of study group, and observed the reporting rate of online reporting system from 2008 July to 2009 June (i.e., intervention group), comparing it with the paper report in 2007. **RESULTS:** There are five radiopaque agents with four nonionic and 1 ionic contrast media (e.g., Gadobenate Dimeglumine, Iodixanol, Iohexol, Ioversol and Urografin) used in our hospital. We received 20 ADR reports within 22,754 prescriptions of radiopaque agents from January to December in 2007 and 62 ADR reports in 29,840 prescriptions from 2008 July to 2009 June. The reporting rate elevated 2.3 times (0.09% to 0.21%) when we shifted paper reporting to online reporting system. In the intervention group, more than half ADR reports were rash and no serious side effects (e.g., nephrotoxicity, anaphylactic shock) had been reported. **CONCLUSIONS:** ADR report is important in patient safety and pharmacovigilance issues. In clinical practice, staff may miss to report ADR because of enormous amount of work load. If the reporting system is more user-friendly, it would be closer to the true incidence of adverse events which have been reported.

PCN2

ASSESSMENT ON THE DECREASING USE OF NARCOTIC ANALGESICS BY USING CANCER PAIN ADJUVANTS

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OBJECTIVES: Narcotic analgesic was usually used to relieve cancer pain in the past decades. Recently, co-analgesics with adjuvant drugs have become an essential way and successful alternatives for holistic care. The aim of this study is to assess the outcome of using cancer pain adjuvants. **METHODS:** This is an observational study. Cancer patients with pain score > 3 were recruited from three medical centers in Taiwan. Numeric Pain Rating Scale, Wong-Baker Face Pain Rating Scale and Brief Pain Inventory were used to evaluate the differences of pain control between two groups, addition of pain adjuvants and narcotics. The monthly consumption of narcotics, the frequency of breakthrough pain and adverse event were recorded for analysis by Paired *t*-test. **RESULTS:** A total of 120 patients were eligible in this study. Fifty-five (45.8%) and 65 (54.2%) patients received narcotic analgesics and pain adjuvants for pain control, respectively. The satisfaction of patients in both groups on pain control improved 2.03 ± 1.87 points in the narcotics group and 2.14 ± 1.72 points in concomitant adjuvants group without significant difference. ($F_{1,118} = 0.1024$, $P = 0.7495$) The times of breakthrough pain was significantly decreased in adjuvants group as compared to narcotics group(−1.47 ± 2.23 vs. −0.48 ± 1.80; $F_{1,118} = 7.3556$, $P = 0.0077$). **CONCLUSIONS:** No significant difference in total consumption of narcotics and pain control was founded. The frequency of breakthrough pain is likely to be improved in the concomitant adjuvants as compared in the narcotics group. The study found the safety of adjuvant therapy do no harm to palliative patients.

PCN3

RANDOMIZED, PLACEBO, CONTROLLED, DOUBLE-BLIND TRIAL OF MELATONIN IN CHOLANGIOCARCINOMA PATIENTS

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OBJECTIVES: Cholangiocarcinoma is a leading cause of cancer death in the Northeast of Thailand. Currently, chemotherapy and supportive care are the main treatments in non-resectable cholangiocarcinoma patients. Many adverse events (AE) from disease and treatments have been reported that affect quality of life (QOL) of the patients. This study evaluated the efficacy of melatonin compared to placebo on the QOL, AE and survival time. **METHODS:** The study was a randomized, double-blind, placebo, controlled trial. The patients received treatment following the protocol of each hospital, and the study drug. Patients were randomized by mixed-block randomization stratified by hospital and type of treatment. The treatment group received melatonin (20 mg/day) and the control group received placebo. Patients started taking the study drug on the first day of the treatment and continued for 3 months. QOL was assessed using Thai Functional Assessment of Cancer Therapy-Hepatobiliary (FACT-HEP) and AE were assessed using Common Toxicity Criteria Adverse Events (CTCAE). **RESULTS:** There were 30 patients recruited in the study, divided into 15 patients in each group. Baseline characteristics of the two groups were not different. The melatonin group had a higher but not significant percentage of improvement in FACT-Hep scores than the control in both the first (20% vs. 6.7%) and second (20% vs. 6.7%) month. Median survival was longer in the melatonin group (160 vs. 130 days, $P > 0.05$). In addition, there were fewer reports of Grade 3–5 AE in the melatonin group than placebo in terms of anorexia (11% vs. 50%), fatigue (11% vs. 50%), nausea/vomiting (0% vs. 10%) and weight loss (0% vs. 20%). **CONCLUSIONS:** The combination of melatonin with standard treatment did not prolong overall survival. However, the melatonin treatment can decrease AE and maintain quality of life of non-resectable cholangiocarcinoma patients. Further studies with larger samples are needed.

PCN4

CANCER SYMPTOM SURVEY AND RELIABILITY ANALYSIS

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OBJECTIVES: Through symptom survey in cancer patients to find out the symptom distribution and patients treatment require. Also validate set of symptom items that are most commonly used in Traditional Chinese Medicine (TCM). **METHODS:** Use M. D. Anderson Symptom Assessment Inventory (MDASI) that previously validated Chinese version. Add 10 TCM items. We also asked the questions about using TCM request in cancer care. A multi center cross-sectional study using a convenience sample of 340 patients were conducted in 3 hospitals in Beijing and Dalian. Statistical use Spss and Excel software. Self evaluate questioner with Cronbach's Alpha score. **RESULTS:** The most severe symptoms were fatigue 89.4%, sleeping disturbance 74.4%, moth drier 72.9%, and poor appetite 72.9%, forgotten 71.2%. The influence of cancer symptoms to work, mood and activity were 89.7%, 82.6%, 78.6% separately. The quality of life was affected severely. 80% patients want to regulate the body with TCM. Almost 100% patients hope to know the knowledge of integrated TCM and western medicine, and the effect of TCM treatment cancer and health recover. Cronbach's Alpha score indicated acceptable internal consistency both the MDASI and TCM items, 0.86 for MDASI, 0.78 for TCM, 0.9 for MDASI_TCM 23 items. **CONCLUSIONS:** Fatigue, sleep disturbance, moth drier, poor appetite and forgotten are more severe symptoms in our cancer patient's survey. Greatly affect the quality of life of patients. There are an extremely request that TCM holism regulation in cancer patients. The MDASI and its TCM model could a critical tool to measure the effectiveness of TCM in cancer symptom management.